AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

RESEARCH ACTIVITIES

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Medication reconciliation meets its MATCH

Once a month on a Tuesday afternoon, Robbin St. John, R.Ph., doesn't answer email or the phone. She closes her office door and sits down with a quality assurance nurse to review 20 complete medical records from St. Mary's Hospital, a 200-bed hospital in Athens, Georgia.

Each time, their mission is the same: to monitor medication reconciliation. They compare the patient's current medication regimen against any admission, transfer, and discharge orders to identify medication discrepancies, and then they dig deeper. "We want to know, for example, 'Did the pharmacist enter every order correctly,'" explains St. John, a pharmacist at the hospital.

Robbin St. John, R.Ph., and Ron Leftwich, B.S.N., M.H.S., stand in front of a patient safety display at St. Mary's Hospital. This display is one way the hospital works to get medication reconcilliation right.

For 3 years, the percentage of charts that accurately portrayed a patient's list of medications hovered below 90 percent. St. John, a pharmacist with 39 years of experience, knew St. Mary's was performing better than many hospitals, but she wanted to improve.

The need to do better is universal. AHRQ-funded researchers found that nearly 35 percent of hospital patients experienced a medication error at the time of admission. Of those errors, 85 percent originated in the patients' medication histories.

St. John took advantage of AHRQ's MATCH toolkit to improve her hospital's medication reconciliation process and patient safety.

Making a MATCH

MATCH stands for Medications at Transitions and Clinical Handoffs. "There's been so much literature since as far back as 1985 about problems with medication discrepancies, but not enough about solutions," Kristine Gleason, M.P.H, R.Ph., a clinical quality leader at Northwestern Memorial Hospital in Chicago and one of the people who created MATCH, told *Research Activities*. "We wanted to put a spotlight on solutions such as medication reconciliation."

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From the Director

While it may be axiomatic that clinicians need to know their patients' medications, in reality, this information is often unavailable when important treatment decisions are made, especially at key transition points—hospital admission, transfer between care settings, and discharge.

AHRQ's report *Making Health Care Safer II*, which was posted on the AHRQ Web site in March 2013, cites published articles suggesting that 40 to 50 percent of patients experience unintentional medication discrepancies upon admission to acute care hospitals, slightly higher rates of unintentional discrepancies during internal hospital transfers, and at least 40 percent of patients experience discrepancies at hospital discharge (http://go.usa.gov/TZJY).

A recent example shows how easily drug errors can happen, according to a case posted on AHRQ's Web M&M (morbidity and mortality rounds) site http://go.usa.gov/TZJQ.

A 90-year-old woman was brought to a hospital emergency department (ED) after breaking her hip. The woman's daughter gave a nurse her mother's medication bottles, including one for high blood pressure. Using that information, the nurse prepared a list of drugs for the woman's hospital stay.

Before the woman had hip surgery, a physician noticed her blood pressure was too high and increased her blood pressure medicine from 75 mg to 100 mg. Shortly before surgery, the woman went into cardiac arrest. She was successfully resuscitated, but her surgery had to be postponed.

Only when the woman was moved to the intensive care unit did another nurse notice that the dose level of the blood pressure medicine brought from the patient's home was actually 25 mg, not 75 mg. Fortunately, the woman recovered and several days later had the surgery.

After identifying the error, the hospital staff fixed the mistake, apologized to the patient, and launched a review to find out how similar mistakes could be prevented in the future.

More hospitals are working to reduce the chance of drug-related injuries by using a process known as medication reconciliation. This involves comparing a patient's current drug routine to any changes a physician makes when a patient is admitted, transferred, or released from the hospital.

In the case of the 90-year-old patient's blood pressure drug, careful medication reconciliation in the ED would have verified the proper dosage of blood pressure medicine the patient was taking and would have prevented her later cardiac arrest.

To help hospitals with this process, AHRQ funded research for a new toolkit based on a successful program at Northwestern Memorial Hospital in Chicago. Known as MATCH (Medications at Transitions and Clinical Handoffs), the toolkit provides a step-by-step method so hospitals can review and improve current processes or create new ones.

The cover story in this issue tells how MATCH is helping hospitals with medication reconciliation. We expect MATCH to make medication reconciliation simpler, easier, and more effective.

Carolyn Clancy, M.D.

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> **"We wanted to put a spotlight on solutions such as medication reconciliation."**

AHRQ's MATCH toolkit was developed through an AHRQ Partnerships in Implementing Patient Safety grant that involved collaboration between Northwestern Memorial Hospital, Northwestern University Feinberg School of Medicine in Chicago, and The Joint Commission. The toolkit can help hospitals and other facilities address two U.S. Department of Health and Human Services "Partnership for Patients" priority goals involving better care transitions and fewer hospital readmissions and meet the Joint Commission's national safety goal for maintaining and communicating accurate patient information.

"When we got experts around the table to talk about how to elicit medication information from patients that we needed, we discovered the way we frame the questions may impact the information we receive. I may ask a patient, 'Have you started any medications recently?' and the patient may define recent as the last couple of days or week," explains Gleason. "As a pharmacist, I may mean in the last month or even the last 3 months, as certain medications may take that long to achieve the full effect."

MATCH emphasizes standardizing the process for doctors, nurses, and pharmacists to document and confirm a patient's home medication list on admission to the hospital. For example, the toolkit contains suggestions on how to phrase questions to ask patients about their medications, ways to engage management and clinical teams, as well as samples of flowcharts, templates, and other resources.

"We've been really excited to introduce the toolkit in hospitals, nursing homes, skilled nursing facilities, and home health care agencies that are often involved in health care transitions," says Gleason.

MATCH spreads

The team that developed the toolkit recruited hospitals to test MATCH by reaching out to Medicare Quality Improvement Organizations (QIO) across the country. Twelve States and more than 162 hospitals participated, according to Victoria Agramonte, R.N., M.S.N., a project manager of the Island Peer Review Organization, the QIO in New York. Agramonte also served on the team that enhanced the toolkit with findings from this collaborative.

> **"We know that there are hospitals today that have four or five medication lists in a patient's record."**

"We didn't anticipate this level of success," Agramonte told *Research Activities*. "Medication reconciliation can be a burdensome process, it's deeply rooted in the hospital culture, and it can be hard to fix." For example, she says, "We know that there are hospitals today that have four or five medication lists in a patient's record. Electronic systems are helping, but we're not where we need to be."

> **"We found that when hospitals really take the time to examine what they're currently doing, they achieve a tremendous benefit in the end."**

She urges hospitals to try not to be overwhelmed by the magnitude of the problem. "Once you begin to identify the process and what you have to do, the fixes can be quite easy. A lot of the fixes that hospitals can put in place are system-level fixes," says Agramonte. "In one case, the hospital realized that the electronic health record only had a minimal amount of characters for putting in medications. When they fixed the problem, they got up to 85 to 90 percent compliance. We found that when hospitals really take the time to examine what they're currently doing, they achieve a tremendous benefit in the end," says Agramonte.

How MATCH made a difference at St. Mary's

St. Mary's was one of 19 hospitals in the Georgia Hospital Association to implement the MATCH toolkit.

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"It focused us and put us on task," says St. John. "We flowcharted the process. We hadn't done that in 5 years, and from flowcharting, we found bottlenecks." Those bottlenecks included the emergency room (ER) and the pre-operative area.

After spending 3 days in the emergency room and interviewing nurses, St. John concluded, "The ER has got to be the worst place to do medication reconciliation. Nurses don't have a lot of time to dedicate to the medication reconciliation process, and there can be so many interruptions in the process." She watched as nurses made phone calls to the family and to the pharmacy. "The very process of gathering the correct data, including the last dose taken, is very intense, which can lead to errors."

The bottleneck St. John discovered in pre-op led to system changes. "We realized that our pre-op nurses were not doing medication reconciliation and that was a great opportunity, but they didn't have the capability so we went to nursing and said, 'You've got to put electronic records in pre-op.' The system eliminates handwriting drugs. There's a drop down menu with correct doses," St. John explains. "We've decreased errors and saved time."

To encourage patients to keep accurate lists of their medications and to bring their medications with them to the hospital, the hospital has medication cards and bags available in waiting areas.

St. Mary's Hospital also developed posters for drugs listing what St. John calls the "five rights or the five critical meds—blood thinners, heart meds, insulin, seizure meds, and psych meds that were crucial because they are high-risk and high-volume. We always need to get these right."

Usually St. Mary's does get medication reconciliation right. Since using the MATCH toolkit, accuracy rates have risen to more than 90 percent.

But for St. John, the job is never done. "I tell my boss, 'You know medication reconciliation is never going away and it's never going away from me as long as I work here. You just have to excuse my 39 years of enthusiasm!'" ■ *KM*

Editor's note: To download the MATCH toolkit, go to http://go.usa.gov/TZum.

Patient Safety and Quality

Quality improvement initiative reduces serious safety events in pediatric hospital patients

During the last 10 years, hospitals have implemented a variety of systems to improve their safety culture. Nevertheless, serious safety events (SSEs) continue to occur. Such events can lead to increased length of stay and mortality among children being treated in the hospital. As these events are deemed preventable, new interventions are needed. Recently, researchers at Cincinnati Children's Hospital Medical Center used a quality improvement initiative focused on cultural and system changes that resulted in a significant and sustained reduction of SSEs and an improvement in the overall patient safety culture.

Central to the initiative was the creation of a SSE reduction team that reviewed safety literature and the 35 most-recent SSEs that occurred at the hospital. The researchers also interviewed more than 100 leaders, physicians, and staff to get their opinions. Interventions included error prevention simulation training and the use of volunteer safety coaches to reinforce safety behaviors. A variety of tactical interventions were also developed for high-risk areas, such as the operating room and intensive care unit. Other processes implemented included establishing a patient safety oversight group with regular reviews of root cause analyses of every SSE and sharing of lessons learned across the organization.

After the multipronged quality improvement intervention was implemented, the number of SSEs declined significantly from an average of 0.9 to 0.3 per 10,000 adjusted patient-days. In addition, the length of time between SSEs grew from an average of 19.4 days to 55.2 days, even with an increase in patient volume. Overall, the patient safety culture improved as evidenced by positive responses from staff. The study was supported by AHRQ (HS16957).

See "Quality improvement initiative to reduce serious safety events and improve patient safety culture," by Stephen E. Muething, M.D., Anthony Goudie, Ph.D., M.S.P.H., Pamela J. Schoettker, M.S., and others in the August 2012 *Pediatrics* 130(2), pp. e423-e431. ■ *KB*

Use of antibiotics is common among older adults and varies across regions

The use of antibiotics among Medicare beneficiaries varies across regions, after controlling for differences in patient characteristics, reveals a new study. These regional differences did not seem to be explained simply by differences in the prevalence of underlying conditions, because regions with high use of antibiotics often had lower rates of bacterial pneumonia diagnosis.

Antibiotic use rates were highest in the South (21.4 percent per quarter) and lowest in the West (17.4 percent per quarter). There were also significant quarterly differences in antibiotic use, with the highest rates during the first 3 months of the year, and the lowest rates during the third quarter (July through September). The Northeast had the highest prevalence of bacterial pneumonia, despite having the lowest use of antibiotics, while the South, with the highest antibiotic use rates, had the highest prevalence of nonspecific acute respiratory tract infections, which are often due to viruses not treatable by antibiotics.

This study looked at national data for 2007 through 2009 from three distinct levels: (1) the 306 hospital referral regions identified by the Dartmouth Atlas of Health Care, (2) the 50 States plus the District of Columbia, and (3) four national regions (South, West, Midwest, and Northeast). In addition to bacterial pneumonia, acute nasopharyngitis and other acute respiratory tract infections were included. This study was supported in part by AHRQ (HS18657).

See "Geographic Variation in outpatient antibiotic prescribing among older adults," by Yuting Zhang, Ph.D., Michael A. Steinman, M.D., and Cameron M. Kaplan, Ph.D., in the October 22, 2012 *Archives of Internal Medicine* 172(19), pp. 1465-1471. ■ *MWS*

Perceptions of quality and safety decline as the size of medical practices increases

Most studies of patient safety culture are conducted at the inpatient level in hospitals. However, most care is provided in office-based and ambulatory care settings. To promote more understanding of patient safety culture in medical offices, AHRQ developed the Medical Office Survey on Patient Safety. A new study that used the 51-item survey found that smaller medical office practices have higher overall quality and safety of care compared to larger practices. In addition, a direct relationship was found between increasing practice size and declines in quality and safety perceptions.

The study surveyed 6,534 clinicians and staff working at 306 primary care medical practices about practice size and the use of health information technology (electronic appointment scheduling, medication, test ordering, and electronic access to test results) to determine the impact of these factors on perceptions of care quality and safety. Practice sizes varied from 2 to 15 clinicians. There was a good range of urban, suburban, and rural practices as well as a variety of patient populations served. The survey asked participants to provide overall ratings on quality and patient safety.

Perceptions of quality were significantly associated with practice size but not associated with practice ownership, while the relationship to the level of health IT implementation was complex. Small offices had the highest rankings of overall quality; larger practices had the lowest. This effect was consistent across all quality components such as patient centeredness and effectiveness, timeliness, and efficiency of care. Small offices also had more positive responses regarding the perceived safety of office systems. Interestingly, the highest quality ratings were found in practices with the lowest health IT implementation. However, those practices with full health IT implementation scored intermediate on ratings of overall quality. The study was supported in part by AHRQ (Contract No. 290-07-10016).

See "The relationship of self-report of quality to practice size and health information technology," by Paul N. Gorman, M.D., Jean P. O'Malley, M.P.H., and Lyle J. Fagnan, M.D., in the September-October 2012 issue of the *Journal of the American Board of Family Practice* 25(5), pp. 614-624. *KB*

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Hospital stroke mortality ratings vary by type of stroke

A new study has found that hospital stroke mortality ratings, which are used to profile hospital quality of stroke care, vary considerably depending on whether ischemic, hemorrhagic, or total mortality rates are used. Within any particular hospital, there was poor agreement between ischemic stroke and intracerebral hemorrhage mortality rates (adjusted for patient risk factors). The overall 30-day stroke mortality rate based on New York State data for 2005 to 2006 was 15.2 percent compared to 11.3 percent for ischemic stroke and 37.3 percent for intracerebral hemorrhage. Among the 81 New York hospitals included in the study, there were 26,218 patients with ischemic stroke and 5,411 patients with hemorrhagic stroke.

Contrary to the researchers' expectations, hospitals with a lower proportion of hemorrhagic stroke were more likely to have worse-than-average total stroke mortality rates. Possible explanations include better performance in high-volume centers, overadjustment for intracerebral hemorrhage in the current risk-adjustment model, or different end-of-life treatment practices across hospitals. This study was supported in part by AHRQ (HS16964).

See "Challenges in assessing hospital-level stroke mortality as a quality measure," by Ying Xian, M.D., Robert G. Holloway, M.D., Wenqin Pan, Ph.D., and Eric D. Peterson, M.D., in *Stroke* 43, pp. 1687-1690, 2012. *MWS*

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Patients returning home after hospitalization for stroke benefit from medication coaching by telephone

When patients hospitalized for an acute stroke return home, they must make substantial adjustments to learn how to cope with their condition, their medications and, potentially, new disabilities within a short time frame. A telephone medication coaching program in which patients are contacted by phone soon after discharge is a convenient and relatively inexpensive way to provide assistance to patients and caregivers, concludes a pilot study.

To develop a new program to support patients in their transition to home after hospitalizations for stroke or transient ischemic attack (TIA or "ministroke"), a team of North Carolina-based researchers did a pilot study of a telephone medication coaching program for a small group of 30 patients admitted to Wake Forest Baptist Medical Center with ischemic or hemorrhagic stroke or TIA. The patients had at least two medications changed between hospital admission and discharge. The researchers telephoned the patients once they had returned home from the hospital, and again 3 months later to discuss risk factors, review medications, and direct patients' questions to a stroke nurse and/or pharmacist.

The researchers found that participants had a positive evaluation of the coaching and were more likely to have seen their primary care provider within 3 months of discharge than were patients in the control group who did not receive telephone coaching. Previous research had identified key elements of effective care transitions as including assistance with managing medications and encouragement to followup with primary or specialty care. This study was supported by AHRQ (HS16964).

See "Medication coaching program for patients with minor stroke or TIA; A pilot study," by Elizabeth G. Sides, M.Ed., Louise O. Zimmer, M.A., M.P.H., Leslie Wilson, B.S., and others in *BMC Public Health* 12, p. 549, 2012. ■ *MWS*

Aspirin/warfarin combination reduces the risk of blood clots after aortic valve replacement surgery

Following surgery to replace an aortic valve, patients have a modest risk of developing a thromboembolism (blood clot) within 90 days. To prevent blood clots, they are typically given a blood thinner, such as aspirin, warfarin, or both. While warfarin plus aspirin conferred a better reduced risk of blood clots than aspirin alone, there was an increased risk for bleeding, according to a new study.

The researchers analyzed data from a cardiac surgery database on 25,656 patients 65 years of age and older who received an aortic valve at 787 hospitals. Different anticoagulant strategies were identified, along with the 3-month incidence of death/readmission for a blood clot or bleeding event.

Blood clots and death were rare in the first 3 months after surgery. Aspirin was the most popular anticoagulant used, with nearly half (49 percent) of patients receiving it compared to 23 percent who received warfarin plus aspirin and 12 percent who received warfarin alone. All three strategies had a low 3-month incidence of death: aspirin 3 percent, aspirin plus warfarin 3.1 percent, and warfarin 4.0 percent.

However, adding warfarin to aspirin resulted in a 20 percent relative risk reduction for mortality after 90 days. The 3-month incidence of blood clots was also low. Aspirin and warfarin combined resulted in a 48 percent relative reduction in the risk of both of these problems.

This reduction was particularly true for patients age 75 years and older. The incidence of bleeding requiring readmission was low overall (1.6 percent). However, the 3-month incidence of rehospitalization for a bleeding event was higher among patients receiving warfarin and aspirin at discharge. The researchers recommend an aspirin-only strategy for patients at high risk for bleeding. Those with a low-risk for bleeding can benefit from receiving warfarin plus aspirin. The study was supported by AHRQ (Contract No. 290-05-0032).

See "Early anticoagulation of bioprosthetic aortic valves in older patients," by J. Matthew Brennan, M.D., M.P.H., Fred H. Edwards, M.D., Yue Zhao, Ph.D., and others in the September 11, 2012 *Journal of the American College of Cardiology* 60(11), pp. 971-977. ■ *KB*

Chronic Disease

Lost productivity of people with epilepsy results in significant economic burden

Despite advances in treatment, individuals with epilepsy are often not able to be productive citizens at work. In fact, a new study found significant economic disparities for people with epilepsy compared to those without epilepsy, including high unemployment rates and lost work days. The annual loss of productivity for a person with epilepsy was more than three times higher than that observed for individuals with diabetes or depression.

The researchers used national medical expenditure data to compare 1,026 people with epilepsy (representing 864,958 people with epilepsy nationally) with 383,090 people of the 2008–2009 United States population without epilepsy (representing 305 million people without epilepsy nationally) to estimate the economic burden and employment-based lost productivity among those with epilepsy. They collected information on coexisting medical conditions, health care expenditures, employment status, and missed days of work due to illness or injury. The researchers also calculated lost productivity for epilepsy and other chronic conditions.

People with epilepsy were found to be married less often than those without the condition. They were also more likely to suffer from anxiety/depression and be covered by public health insurance. Health care use and related costs were two to three times higher for those with epilepsy. These individuals also had higher rates of medical provider visits and prescription medications as

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Epilepsy

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well as higher total annual health care expenditures than people without epilepsy.

There were also significant disparities in other areas. For example, the odds of earning a college degree or higher were 30 percent lower for those with epilepsy. Nearly a quarter of the epilepsy population studied was poor or near poor. In addition, 42 percent of those with epilepsy were employed compared to 70 percent of those without the disease. Individuals living with epilepsy had 56 percent lower odds of being employed compared to individuals without the condition and missed an average of 12 days of work compared to only 4 days for those without epilepsy. Their loss of productivity was $9,504 in 2011 dollars compared to individuals without epilepsy. This compares to an annual average lost productivity valued at $3,358 for diabetes, $3,182 for depression, $2,316 for anxiety, $1,519 for asthma, and $651 for hypertension. The study was supported in part by AHRQ (HS19464).

See "Economic differences in direct and indirect costs between people with epilepsy and without epilepsy," by Anne M. Libby, Ph.D., Vahram Ghushchyan, Ph.D., Robert Brett McQueen, M.A., and others in the November 2012 *Medical Care* 50(11), pp. 928-933. ■ *KB*

Dosing frequency has greater impact than pill burden on medication adherence by patients with newly diagnosed HIV

Patients with conditions such as HIV disease that require either taking medication more than once a day or taking multiple medications may find it difficult to adhere to their medication regimens. For patients recently diagnosed with HIV, once-daily dosing of a combination antiretroviral therapy (cART) medication resulted in higher adherence than twice-daily dosing. However, among patients on a once-daily regimen, adherence to a one-pill regimen was no different than adherence to regimens with more than one pill. The results suggest that pill burden is not an important factor in determining adherence to once-daily cART regimens in patients who begin taking cART, suggesting that other factors should drive regimen selection.

Data on the effects of the cART regimen on HIV suppression compared to other regimens was inconclusive due to the small size of the study. The 99 patients in the study were all recently diagnosed with HIV infection and being treated at a clinic in Houston, Texas. This study was supported in part by AHRQ (HS16093).

See "Impact of antiretroviral dosing frequency and pill burden on adherence among newly diagnosed, antiretroviral-naïve HIV patients," by A. Buscher, M.D., C. Hartman, Ph.D., M.A. Kallen, Ph.D., and T.P. Giordano, M.D. in the *International Journal of STD & AIDS* 23, pp. 351-355, 2012. *MWS*

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Not enough HIV patients are receiving aspirin for primary prevention of heart disease

Thanks to advances in HIV care and treatment, persons with HIV disease are living much longer. In fact, more than half of those with HIV will be more than 50 years of age by 2015. These individuals are at increased risk for cardiovascular disease (CVD) and related stroke and heart attack due to advancing age and other factors. As with non-HIV-infected individuals, those with HIV can benefit from taking aspirin to prevent heart attack or stroke. Yet, less than 1 in 5 patients with HIV disease who qualify for aspirin for primary CVD prevention are receiving it.

Patients who qualified for the study had two or more primary provider visits at a major academic medical center HIV clinic. A subset of patients meeting age criteria and with no prior history of CVD then underwent coronary heart disease risk assessment using Framingham Risk Score criteria. The 397 study patients had an average age of 52.2 years, the majority were male (94 percent), and 36 percent were black. Only 17 percent of patients had aspirin prescribed to them to prevent CVD, even though half of the patients studied had an intermediate to high risk for CVD. Among these individuals, 39 percent were smokers, 62 percent had high blood pressure, 63 percent had abnormal lipid profiles, and 16 percent had diabetes. One in 5 was considered obese.

Even among the intermediate-to high-risk patients, only 22 percent were receiving aspirin. Diabetes, high lipid profiles, and smoking were significantly associated with the likelihood of receiving aspirin. According to the researchers, guidelines are needed that specifically address the value of aspirin regimens for the prevention of CVD in patients with HIV infection. The study was supported in part by AHRQ (HS13852).

See "Underutilization of aspirin for primary prevention of cardiovascular disease among HIV-infected patients," by Greer A. Burkholder, M.D., Ashutosh R. Tamhane, M.D., Ph.D., Jorge L. Salinas, M.D., and others in the December 1, 2012 *Clinical Infectious Diseases* 55, pp. 1550-1557. ■ *KB*

Intrinsic alteration in immunoregulation in patients with rheumatoid arthritis has implications for treating osteolysis

Patients with rheumatoid arthritis (RA) who undergo joint replacement due to bone loss around an implant exhibit a distinct cellular response to implant wear debris compared to non-RA patients. This reaction is unrelated to differences in the type or amount of debris and was mitigated by anti-tumor necrosis factor (TNF) therapy. These results suggest an intrinsic alternation in immunoregulation in RA and have implications for treatment of osteolysis in RA patients, according to a new study. This bone loss (called peri-implant osteolysis) and loss of fixation of the prosthetic joint are considered the main reasons for failure of total joint replacements. Joint replacement failure has been attributed to a cellular inflammatory reaction to wear particles from the implant (prosthetic wear debris), although dramatic differences in the rates of bone loss are seen between patients.

The researchers compared responses in 38 patients who had undergone total elbow arthroplasty (TEA). Among these patients, 25 had RA and 13 did not have inflammatory arthritis. The amount and type of wear particles in the tissue surrounding the failed implant did not differ between the RA patients and those without inflammatory disease. However, the patients with RA who were not receiving anti-TNF therapy showed a different histologic pattern (interstitial and sheet-like infiltrates of lymphocytes, with many plasma cells) from the patients without RA (perivascular infiltrates, with few plasma cells). Patients with RA who were being treated with anti-TNF showed a mixed pattern of perivascular and interstitial infiltrates.

Based on their findings, the researchers suggest that immunologic treatment might be successful in preventing more rapid osteolysis in the patients with RA. The surgical specimens and clinical data were for patients who had primary revisions of TEA at the Hospital for Special Surgery in New York City. The study was funded in part by AHRQ (HS16075) to the Cornell Center for Education and Research on Therapeutics (CERT). For more information on the CERTs program, visit www.certs.hhs.gov.

More details are in "Cellular response to prosthetic wear debris differs in patients with and without rheumatoid arthritis," by Anant Vasudevan, B.S., Edward F. DiCarlo, M.D., Lisa A. Mandl, M.D., M.P.H., and others in the April 2012 *Arthritis & Rheumatism* 64(4), pp. 1005-1014. ■ *DIL*

Clinical tool helps to estimate predicted benefit from radiation therapy for older women with breast cancer

Although nearly half of breast cancers are diagnosed in women age 65 and older, the importance of radiation therapy (RT) after conservative surgery remains controversial for women in this age group. In general, RT is recommended for older women to achieve both prevention of recurrence and preservation of the breast. However, RT may have minimal benefit for older women who have a lower baseline recurrence risk. A team of researchers has now developed a clinically useful tool to predict the likelihood of long-term breast preservation with and without RT.

The tool, known as a "nomogram," gives scores to factors predictive of mastectomy, such as age, race, tumor size, estrogen receptor status (positive or negative), and receipt of RT to calculate a weighted total score useful for predicting 5- and 10-year mastectomy-free survival (MFS). Lymph node status was also included, given its significant interaction with RT. With a median follow-up of 7.2 years, the overall 5- and 10-year MFS rates were 98.1 percent and 95.4 percent. The study included 16,092 women age 66 to 79 years treated with conservative surgery between 1992 and 2002.

In addition to providing estimates of baseline probability of MFS, the nomogram also provides individualized estimates of potential benefit from RT. The researchers believe that since indications for RT remain unclear and continue to be debated for older patients, their clinical tool will be useful to patients and physicians when evaluating adjuvant treatment options. The nomogram is publically available on The University of Texas MD Anderson Cancer Center Web site (www.mdanderson.org/RadiationBenefitPredictor). This study was supported in part by AHRQ (HS18565).

See "Nomogram to predict the benefit of radiation for older patients with breast cancer treated with conservative surgery," by Jeffrey M. Albert, M.D., Diane D. Liu, M.S., Yu Shen, Ph.D., and others in the August 10, 2012 *Journal of Clinical Oncology* 30(23), pp. 2837-2843. ■ *MWS*

Women less likely to undergo cesarean deliveries if their doctors listen and respond to their concerns

The rate of cesarean delivery in the United States steadily grew from 20.7 percent in 1996 to 32.9 percent in 2009, a record high. Experts recommend that this rate be reduced. Women who reported that their prenatal care providers listened and responded to their concerns were less likely to undergo cesarean delivery, reveals a new study. However, women who felt empowered and had confidence in their self-care were more likely to deliver by cesarean.

The study included 1,308 women who had just given birth at 2 hospitals: a suburban health maintenance organization medical center and an urban public hospital. Bilingual and bicultural interviewers (English and Spanish) asked the women questions to elicit information on interpersonal processes of care (IPC), such as communication issues, patient-centered decisionmaking, and the interpersonal style of the provider. Researchers also reviewed the women's medical records.

Rates of cesarean delivery were 22.6 percent at the public hospital and 30.1 percent at the medical center. Women who scored higher on the IPC item related to the physician's elicitation of patient problems and responsiveness were 84 percent less likely to undergo a cesarean. However, women who

had higher scores on the IPC item on empowerment and self-care were twice as likely to deliver by cesarean. The researchers also found that women with poor or no

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Cesarean deliveries

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English proficiency were 96 percent less likely to have a cesarean compared to women with higher proficiency. Women younger than 22 years old were half as likely to deliver by cesarean compared to women ages 22 to 35. The study findings suggest that clinicians need to emphasize and improve their communication with patients during prenatal care to reduce unnecessary cesarean sections. The study was supported by AHRQ (HS10856).

See "Interpersonal processes of care and Cesarean delivery in two health care settings," by Nancy A. Hessol, M.S.P.H., Roxana Odouli, M.P.H., Gabriel J. Escobar, M.D., Elena Fuentes-Afflick, M.D., M.P.H., and others in the September 2012 *American Journal of Public Health* 102(9), pp. 1722-1728. ■ *KB*

Combined oral contraceptives effective in treating abnormal uterine bleeding

A new research review from AHRQ finds that there is strong evidence for the use of combined oral contraceptives (COCs) to improve menstrual regularity and reduce menstrual blood loss for women with abnormal uterine bleeding (AUB). The review focuses on evaluation of nonsurgical options to treat AUB, with an emphasis on interventions that are accessible to and within the scope of usual practice for primary care practitioners in any clinical care setting.

The review finds that effective treatment options (both contraceptive and noncontraceptive) are available in the primary care setting for women who have problematic, irregular, or heavy cyclic menstrual bleeding. In addition to COCs, Metformin®, a drug commonly used to treat diabetes, also improves cycle regularity. Other treatments, such as progestogens and non-steroidal anti-inflammatory drugs (NSAIDs) also have varying levels of effectiveness in women with irregular bleeding patterns.

While this review finds strong evidence of the effectiveness of COCs for the treatment of AUB, additional studies are needed that look at both biological and patient-reported outcomes over longer periods of time and in women who are representative of those seeking treatment by their primary care providers.

Abnormal uterine bleeding is among the most common of gynecologic complaints from women of reproductive age in ambulatory care settings – of similar frequency to the number of women seeking care for urinary tract infections and vaginitis. In the general population, AUB is estimated to affect 11 to 13 percent of reproductive-age women. The prevalence increases with age, reaching 24 percent in women aged 36 to 40. You can access the research review, *Primary Care Management of Abnormal Uterine Bleeding* at: http://go.usa.gov/TBFC.

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Poor preconception mental health a major factor in pregnancy complications and adverse birth outcomes

Poor preconception mental health is the most significant risk factor for pregnancy complications, a possible risk factor for non-live birth, and a strong risk factor for low birth weight (LBW), found a new study. Women who reported poor mental health before pregnancy were 40 percent more likely to have a pregnancy complication, almost 50 percent more likely to have a non-live birth, and nearly twice as likely to give birth to a LBW baby. Other risk factors included race/ethnicity, age, education, marital status, health insurance status, income, and the number of children in the household.

Women were categorized as having poor preconception mental health only if they reported a global mental health rating of "fair" or "poor." The study was based on the nationally representative, population-based Medical Expenditures Panel Survey, Household Component. Since each outcome employed distinct exclusion criteria, the study sample

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Preconception mental health

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consisted of 3,373 women to examine pregnancy complications, 2,671 for having an outcome other than a live birth, and 2,108 for birth weight.

Pregnancy complications and poor birth outcomes are serious public health problems, causing substantial morbidity and mortality for mothers and their children. Because many risk factors for adverse obstetric outcomes can be identified and managed prior to pregnancy, recent recommendations have focused on improving women's health during this critical preconception period. The researchers conclude that women and their health care providers should strive to identify and address poor mental health during the preconception period.

This study was supported in part by AHRQ (T32 HS00083).

See "Preconception mental health predicts pregnancy complications and adverse birth outcomes: A national population-based study," by Whitney P. Witt, Ph.D., M.P.H., Lauren E. Wisk, Erika R. Cheng, and others in the *Journal of Maternal and Child Health* 16, pp. 1525-1541, 2012. ■ *MWS*

Several psychological and drug treatments appear effective for improving outcomes for adults with posttraumatic stress disorder

Several psychological and drug treatments appear to be effective for improving outcomes for adults with posttraumatic stress disorder (PTSD), according to a new research review by AHRQ's Effective Health Care Program. Exposure therapy, a type of psychological treatment that involves exposure to a feared object or context without any danger to help overcome anxiety, has the strongest evidence for improving PTSD symptoms. Other psychological therapies that improve PTSD symptoms include cognitive processing therapy, cognitive therapy, cognitive behavioral therapy-mixed therapies, eye movement desensitization and reprocessing, and narrative exposure therapy. Cognitive therapy is a type of psychotherapy based on the concept that the way we think about things affects how we feel emotionally.

Pharmacological treatments that improve PTSD symptoms include fluoxetine, paroxetine, sertraline, topiramate and venlafaxine. Paroxetine and venlafaxine may have other benefits including achieving remission and improving depression symptoms and functional impairment. PTSD is a mental disorder that may develop following exposure to a traumatic event such as military combat, motor vehicle collisions, violent personal assault, or natural or human-caused disasters.

People with PTSD suffer decreased role functioning and many other adverse life-course consequences, including job loss, familial discord, reduced educational attainment, and decreased work earnings and marriage attainment. Although the evidence supports the effectiveness of several types of psychological and drug treatments for PTSD, clinical uncertainty exists about what treatment to select for individual patients. Practical considerations, such as availability of psychological treatments and patient preferences, may guide treatment decisions. These findings and others can be found in the research review *Psychological and Pharmacological Treatments for Adults With Posttraumatic Stress Disorder* (PTSD) at http://go.usa.gov/TBeB.

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More and stronger research needed on the effectiveness of interventions to prevent PTSD

A new research review from AHRQ's Effective Health Care Program identifies areas that require increased and more methodologically sound research about the efficacy of most interventions used to prevent posttraumatic stress disorder (PTSD). However, there is sufficient evidence to draw conclusions on some specific therapies for certain types of trauma.

For civilian victims of injuries requiring inpatient surgical admission, collaborative care (a combination of care management, psychopharmacology, and cognitive behavioral therapy) is effective at reducing the severity of PTSD symptoms at 6-, 9-, and 12-month followup consultation. In individuals with acute stress disorder, brief trauma-focused cognitive behavioral therapy, which includes components of exposure, cognitive restructuring, and various coping skills, is more effective in reducing the severity of PTSD symptoms than supportive counseling. Available evidence also suggests that debriefing is not effective in reducing either the incidence or severity of PTSD or depressive symptoms at a 6-month followup in civilian victims of crime, assault, or accident trauma.

Sixty percent of men and 51 percent of women report experiencing at least one traumatic event in their lifetime. Approximately 10 to 20 percent of those individuals develop PTSD symptoms, which are associated with impaired functioning. The essential feature of PTSD is the development of characteristic symptoms such as re-experiencing a trauma, avoidance or numbing from thoughts, feelings, or activities associated with a trauma, or hyperarousal following exposure to an extreme traumatic stressor. Prevention of PTSD can potentially reduce a significant burden on individual and societal suffering. The limited evidence underscores the need for more ongoing research in the field of PTSD prevention. Future research should use rigorous methods and collect information that would allow the development of a clinical prediction algorithm to identify people at high risk of developing PTSD after trauma exposure, and then evaluate the effectiveness of preventive interventions.

You can access the research review *Interventions for the Prevention of Posttraumatic Stress Disorder (PTSD) in Adults After Exposure to Psychological Trauma* at http://go.usa.gov/TBtV. ■

Depressed patients who report distressing adverse events with citalopram are likely to have similar events with other kinds of antidepressants

Some 5–12 percent of patients with depression treated in primary care settings stop taking their medication because of adverse events. A new study has found that patients reporting distressing adverse events (DAEs) during first-step treatment with citalopram are particularly likely to report DAEs after switching to a second antidepressant. This scenario is true even when the second treatment is from a different class of antidepressant. During second-step treatment, patients are significantly more likely to report DAEs related to the genitourinary system or to sexual functioning if they have reported similar events during initial treatment with citalopram.

Of 727 patients beginning treatment with citalopram and then switching to one of three alternative antidepressant medications (sustained-release buproprion, sertraline, or extended-release venlafaxine), 70.7 percent reported at least one DAE during first-step treatment with citalopram. Compared with those who did not report a DAE during first-step treatment, patients who reported DAEs were significantly more

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Antidepressants

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likely to be married or cohabiting (42.6 percent vs. 32.4 percent), to have anxious features (49.2 percent vs. 40.4 percent), or to have additional axis 1 disorders as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (66.3 percent vs. 56.8 percent).

Given the lack of evidence favoring one treatment over another, the selection of a second antidepressant for patients who fail to respond to initial treatment due to adverse events is difficult. This quandary is further deepened by the finding that patients who report DAEs during initial antidepressant use are at high risk of reporting similar problems after switching to an alternative treatment, regardless of the drug selected. The study was supported by AHRQ (Contract No. 290-05-0040).

See "Distressing adverse events after antidepressant switch in the sequenced treatment alternatives to relieve depression (STAR*D) trial: Influence of adverse events during initial treatment with citalopram on development of subsequent adverse events with an alternative antidepressant," by Aaron J. Katz, Pharm.D., Stacie B. Dusetzina, Ph.D., Joel F. Farley, Ph.D., and others in *Pharmacotherapy* 32(3), pp. 234-243, 2012. ■ *MWS*

Elderly Health/Long-Term Care

Risk of death increases in nursing home residents after exposure to typical antipsychotics

Antipsychotic medications are commonly used in nursing homes to help patients with dementia, schizophrenia, and other behavior problems. Older drugs, called typical antipsychotics, can cause a variety of central nervous system side effects. The newer, atypical agents are preferred by many due to their better side effect profiles. Typical antipsychotics can increase the risk for mortality in the elderly, concludes a new study.

Researchers analyzed Medicare and Medicaid data on 3,609 typical antipsychotic users matched with 3,609 atypical antipsychotic users. All were 65 years and older residing in nursing homes in 4 States and insured by both Medicare and Medicaid. These dually eligible residents are generally poorer and less healthy than other nursing home residents. Prescription claims data were used to identify the type of antipsychotic prescribed. Each resident was followed for a maximum of 180 days to determine the risk of death from using these agents.

The all-cause mortality risk was highest (81 percent) during the first 40 days of typical antipsychotic therapy compared to treatment with atypical agents. Overall, there were 1,529 deaths. Residents who used atypical antipsychotics had an unadjusted mortality rate of 18.42 percent compared with 24.06 percent for users of typical antipsychotics. On average, there was a 41 percent higher risk of death within 180 days of exposure to typical agents compared to treatment with atypical agents. The researchers advise physicians to base their decisions to use antipsychotics in this population on individual risk factors as well as the acute and long-term risks of therapy. Since dual-eligible residents are particularly vulnerable, they should be closely monitored once antipsychotic treatment is started. The study was supported by AHRQ (HS16920).

See "Risk of death in dual-eligible nursing home residents using typical or atypical antipsychotic agents," by Rajender R. Aparasu, M.Pharm., Ph.D., Satabdi Chatterjee, B.Pharm., M.S., Sandhya Mehta, M.S., and Hua Chen, M.D., Ph.D., in the November 2012 *Medical Care* 50(11), pp. 961-968. ■ *KB*

Patient-centered medical homes cost-effectively improve patient experience and quality of care for seniors

Older patients who received primary care at a patient-centered medical home (PCMH) reported significantly better experiences in shared decisionmaking a year later, and in coordination of care and access to care both 12 and 24 months later than did similar patients at two control clinics, according to a new study. The PCMH care model was originally developed to provide better coordinated, family-oriented care for children with special needs. More recently, it has been expanded to provide patients of all ages with primary care that emphasizes long-term relationships between physicians and patients.

The researchers used data from a large regional integrated health system's pilot study that compared a primary care clinic converted to the PCMH model with two control clinics. In addition to the results in terms of patient experience, the researchers also compared care quality at the PCMH clinic with quality of care at the system's other 19 primary care clinics. They found that clinical quality on 22 measures improved for patients over 65 years old over baseline for the PCMH at 12 and 24 months, but did not differ significantly between the pilot clinic and the 19 control clinics. PCMH patients used more email, phone, and specialist visits, but fewer emergency services and inpatient admissions for ambulatory care-sensitive conditions. At 1 and 2 years, the PCMH and control clinics did not differ significantly in overall costs. The study was funded in part by AHRQ (HS19129).

More details are in "Impact on seniors of the patient-centered medical home: Evidence from a pilot study," by Paul A. Fishman, Ph.D., Eric A. Johnson, M.S., Kathryn Coleman, M.S.P.H., and others in the October 2012 *The Gerontologist* 52(5), pp. 703-711. *DIL*

Disparities/Minority Health

Racial disparities shown in the postsurgical treatment of elderly women with early-stage breast cancer

Older black women are less likely than older white women to receive chemotherapy or radiation therapy after having breast conserving surgery (BCS) for early-stage breast cancer, according to a new study. Previously, racial disparities in breast cancer mortality were attributed to black women being diagnosed when the cancer was at a later stage, fewer physician recommendations for breast cancer screening, higher rates of obesity and hypertension, as well as nonclinical factors. In this study, the researchers compared post-surgical treatment of black and white women aged 65 or older diagnosed with early-stage breast cancer, who were treated by either BCS or mastectomy, and had close-in (proximal) lymph nodes checked for the presence of cancer cells.

After adjusting their data for patient age, tumor characteristics, number of coexisting illnesses (and socioeconomic status in a second model), the researchers found that black women were less likely than white women to receive chemotherapy (25 percent less if lymph node-positive and 17 percent less if node-negative). Adjustment for socioeconomic factors did not weaken this relationship, with a significant 27 percent reduction in the chance of chemotherapy treatment for node-positive black women aged 65–69 years when compared to similar white women.

The node-positive and node-negative black women were 26 percent and 23 percent less likely to receive radiation therapy after BCS than were white women. This disparity, however, was no longer significant after adjustment for socioeconomic characteristics. When the researchers compared all-cause mortality between the two racial groups, the differences were not significant for those women

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Early-stage breast cancer

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who had BCS, no radiation therapy, or radiation therapy following BCS. For node-negative women who did not receive chemotherapy, the black women had an 11 percent higher risk of dying than white women. Black women who underwent mastectomy, regardless of node status, had marginally significant higher risks of dying than did similar white women (12 percent if node-positive and 15 percent if node-negative). The findings were based on data on 54,682 older women with stage I, II, or IIIa breast cancer from the National Cancer Institute's SEER–Medicare linked databases for 1991–2002. The study was funded in part by AHRQ (HS17567).

More details are in "Differences in treatment and survival among African-American and Caucasian women with early stage operable breast cancer," by Kavita Sail, Ph.D., Luisa Fanzini, Ph.D., David Lairson, Ph.D., and others in the June 2012 *Ethnicity & Health* 17(3), pp. 309-323. ■ *DIL*

Percentage of families with full-year health insurance coverage for both child and parent fell during 1998 to 2008

A new study reveals that from 1998 to 2008 the percentage doubled for families in which children, but not their parents, had full-year health insurance coverage, rising from 6.3 percent in 1998 to 12.7 percent in 2008. During the same time period, the percentage of families with full-year coverage for both parents and children fell from 74.2 percent to 67.2 percent. Little change was observed over this period in the percentage of families with insured parents/uninsured children, or the percentage of families with neither parents nor children insured.

The study also found drastic differences in coverage depending on family income: low-income (less than 200 percent of the Federal Poverty Level [FPL]), middle-income (between 200–400 percent of FPL), or high-income (at least 400 percent of FPL). The percentage of low-income families with both children and parents insured fell from 54.5 percent in 1998 to 48.6 percent in 2008, while families with children but not parents insured doubled from 12.4 percent to 25.1 percent.

The decline in middle-income families with both children and parents insured also fell from 78.4 percent to 72.9 percent. However, the proportion of high-income families with both children and parents insured fell only slightly from 89.9 percent to 87.6 percent. Other characteristics consistently associated with lack of insurance were living in the South, being Hispanic, having only one parent in the household, and parents who had less than 12 years of education.

The study period began just after the 1997 Children's Health Insurance Program was passed by Federal legislation. The researchers used data from AHRQ's Medical Expenditure Panel Survey-Household Component. The study was funded in part by the AHRQ (HS18569).

More details are in "Trends in health insurance status of US children and their parents, 1998-2008," by Heather Angier, M.P.H., Jennifer E. DeVoe, M.D., D.Phil., Carrie Tillotson, M.P.H., and others published online September 27, 2012 in *Maternal and Child Health Journal. DIL*

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Patients who move among medical groups have higher care costs and use than those who stay in the same group

Large medical groups are often responsible for providing medical care to members of health care plans. Belonging to the same medical group over time improves continuity of care. In fact, a new study found that individuals who moved among medical groups had higher health care costs and greater use of inpatient and emergency care than those who did not. Researchers analyzed claims data on 121,780 patients enrolled in a large nonprofit statewide health plan from 2005 to 2009. A patient's medical group was where they received the greatest number of primary care visits each year regardless of the number of providers seen. Patients were classified as high continuity if they stayed in the same medical group.

Within the study population, 4 percent of patients were never attributable to a medical group during the 5 years. These tended to be younger, male, and less likely to have chronic conditions. The majority of patients (84 percent) were attributed to a medical group in 3 or more years. These patients tended to be older, female, have a high prevalence of chronic conditions, and to be covered by Medicare. Most of this group was also classified as having high continuity, that is, they stayed in the same medical group for all years. High-continuity patients had more coexisting conditions and older age than patients considered to have medium or low continuity.

Patients with high medical group continuity also had a lower probability of having any inpatient expenditure or emergency department use. They also had lower total medical costs. Medium- and low-continuity patients had 9 percent to 18 percent higher total costs of care compared to high-continuity patients, most likely from their increased use of emergency departments and inpatient hospitalizations. The study was supported by AHRQ (Contract No. 290-07-10010).

See "Patient medical group continuity and healthcare utilization," by Louise H. Anderson, Ph.D., Thomas J. Flottemesch, Ph.D., Patricia Fontaine, M.D., M.S., and others in the August 2012 *American Journal of Managed Care* 18(8), pp. 450-457. ■ *KB*

Child/Adolescent Health

High-risk infants have better survival when delivered at hospitals with high-level neonatal intensive care units

Most women deliver their infants at hospitals that do not have high-level neonatal intensive care units (NICUs). Using a method to account for hospital differences, a new study finds a significantly improved survival when premature babies are delivered in hospitals with high-level NICUs. This advantage is conferred on both extremely and moderately preterm infants.

Researchers reviewed deliveries at hospitals in Pennsylvania, California, and Missouri from 1995 to 2005 (2003 for Missouri). Infants had a gestational age of between 23 and 37 weeks, with birth weights ranging from 400 to 8,000 grams. Delivery at a high-level NICU was studied to determine its effect on in-hospital death and five complications associated with premature birth.

Mothers delivering their babies at high-level NICUs tended to have preexisting conditions such as diabetes,

premature labor, or another complication of pregnancy. Infants born in these NICUs had a younger gestational age. Taking hospital differences into account, the

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High-level neonatal intensive care units

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researchers found that delivery in these units was associated with lower in-hospital mortality rates. This amounted to 12.6 fewer deaths/1,000 deliveries in Missouri, 7.8 fewer in Pennsylvania, and 2.7 fewer in California. With the exception of infection rates, the three States had similar rates of complications whether infants were delivered at hospitals with high-level NICUs or at other types of delivery hospitals.

Higher infection rates were observed in hospitals with high-level NICUs. However, there were lower rates of bronchopulmonary dysplasia at high-level NICUs in Missouri. The study was supported by AHRQ (HS15696).

See "The differential impact of delivery hospital on the outcomes of premature infants," by Scott A. Lorch, M.D., M.S.C.E., Michael Baiocchi, Ph.D., Corinne E. Ahlberg, M.S., and Dylan S. Small, Ph.D., in *Pediatrics* 130, pp. 270-278, 2012. ■ *KB*

Quality measure compliance for children's asthma care reduces hospital readmissions

Increasing provider compliance with the Joint Commission's three quality measures for children's inpatient asthma care by use of a standardized care process model (CPM) can significantly reduce hospital readmissions for asthma, according to a new study. Because the first two quality measures (CAC-1, percentage of patients who received beta agonists, and CAC-2, percentage of patients who received systemic steroids) were already achieved in at least 99 percent of cases in the study at baseline, only the implementation of care process changes to increase patient discharges with a home management plan of care (CAC-3) reduced 6-month asthma rehospitalizations.

The researchers analyzed data on 1,865 children hospitalized for asthma at a children's hospital during a 6-year period—754 during preimplementation of the CPM (January 2005–December 2007), 438 during CPM implementation (January 2008–March 2009), and 673 during postimplementation (April 2009–December 2010). CAC-3 was fully implemented in 0.4 percent of cases during preimplementation, but in 86.5 percent of cases during the postimplementation phase.

The 6-month asthma readmission rates dropped from an average of 17 percent before CPM implementation to 12 percent during the postimplementation phase, but not until 9 months of sustained high compliance with CAC-3. The researchers suggest that because of existing high compliance with CAC-1 and -2 at baseline, their use as quality measures needs to be reconsidered. They used data from a large tertiary academic children's hospital in Salt Lake City to

compare outcomes before and after implementing the asthma CPM. The study was funded in part by AHRQ (HS18166 and HS18678).

More details are in "The Joint Commission Children's Asthma Care quality measures and asthma readmissions," by Bernhard A. Fassl, M.D., Flory L. Nkoy, M.D., M.S., M.P.H., Bryan L. Stone, M.D., M.S.C.I., and others in the September 2012 *Pediatrics* 130(3), pp. 482-491. ■ *DIL*

No consensus on efficacy, safety, and applicability of feeding and nutrition interventions for adolescents with cerebral palsy

A new AHRQ research review on feeding and nutrition interventions in adolescents with cerebral palsy (CP) finds that despite a range of potential feeding interventions, consensus is lacking on the efficacy, safety, and applicability of these interventions. Multiple interventions are often used in combination to treat feeding difficulties in adolescents with CP, making it difficult to know the individual effects of each intervention.

Although all of the studies reviewed demonstrate significant weight gain with gastrostomy (tube feeding directly into the stomach), the review finds that results for other growth measures are mixed and there are potential risks of harms such as overfeeding, infection, stomach ulcers, and reflux. Moreover, there is not sufficient evidence to determine how well behavioral (e.g., oral stimulation, caregiver training) and surgical interventions can reduce feeding difficulties in adolescents with CP.

CP is the most common cause of motor disability in children. More than 100,000 children are estimated to be affected in the United States, and approximately 90 percent of children with CP survive into adulthood. People with CP frequently have feeding and swallowing problems that may lead to a variety of complications. This review examined the effectiveness of available interventions for feeding and nutrition problems that have been evaluated in individuals with CP.

The research review *Interventions for Feeding and Nutrition in Cerebral Palsy* can be accessed at http://go.usa.gov/TKqk. ■

Allergen-specific immunotherapy is safe and effective for treating nasal allergies and mild asthma

A new research review from AHRQ finds at least a moderate level of evidence that allergen-specific immunotherapy is effective and safe for the treatment of nasal allergies and mild asthma in both adults and children. This immunotherapy is either injected under the skin (subcutaneous) or administered in an off-label mechanism via placement under the tongue (sublingual). This type of therapy is typically recommended for people whose conditions cannot be controlled by other strategies, who cannot tolerate their medications, or who do not comply with chronic medication regimens.

The review finds a high strength of evidence that subcutaneous allergen-specific immunotherapy reduces asthma, nasal and conjunctivitis symptoms, as well as the use of asthma medications, and improves rhinoconjunctivitis-specific quality of life. There is a moderate strength of evidence that subcutaneous immunotherapy reduces the use of rhinoconjunctivitis medication.

Similarly, there is a high strength of evidence that sublingual immunotherapy reduces asthma symptoms, and a moderate level of evidence that it reduces nasal and conjunctivitis symptoms and medication usage, and improves allergy-specific quality of life. In the United States, there are currently no sublingual forms of immunotherapy approved by the Food and Drug Administration, though researchers and physicians in the United States are exploring the off-label use of subcutaneous aqueous allergens for sublingual desensitization.

Because there are fewer pediatric studies than adult studies, the evidence to support the use of allergen-specific immunotherapy in children is somewhat weaker than the evidence supporting its use in adults. Additional studies may provide more insight into the effectiveness and safety of allergen immunotherapy in the pediatric population.

Based on the current evidence, it is unknown whether one route of administration is more effective or safer than the other. Additional studies that directly compare subcutaneous versus sublingual therapies would be required to answer this question.

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Allergen-specific immunotherapy

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Allergic rhinitis is a widespread clinical problem, estimated toaffect 20 to 40 percent of the population in the United States. The prevalence of asthma in the general U.S. population is approximately 9 percent, and approximately 62 percent of individuals with asthma have evidence of atopy (i.e., one or more positive specific IgE levels that indicate allergies).

These findings are available in the research review *Allergen-Specific Immunotherapy for the Treatment of Allergic Rhinoconjunctivitis and/or Asthma: Comparative Effectiveness Review* at http://go.usa.gov/TKcT. ■

Some interventions may prevent weight gain

There is some limited evidence that certain interventions and approaches may help prevent weight gain, finds a new research review from AHRQ. The strategies of interest were self-management techniques, diet, physical activity, use of the dietary fat absorption inhibitor orlistat, or combinations of these strategies applied at the individual or community level. Potentially effective strategies include ones that involve minor behavior change (such as eating more meals prepared at home) or more major changes (including endurance exercise training in a gym at least three times per week).

Two interventions had moderately strong evidence: a work-based intervention that combined diet, physical activity, and environmental interventions; and aerobic and resistance exercise performed at home among women with a history of cancer.

From 2005 to 2008, only 31 percent of American adults were at a healthy weight. By 2008, health care costs associated with obesity were estimated at $147 billion. Obesity is a risk factor for chronic conditions including cardiovascular disease, type 2 diabetes, arthritis, certain types of cancer, and cancer recurrence.

Although evidence is limited to support strategies preventing weight gain, the rationale to prevent weight gain is sound given the strong evidence that obesity is associated with poor health, is costly, and is difficult to reverse. More research is needed to examine strategies to prevent weight gain among healthy weight individuals and, separately, overweight and obese individuals. You can access the research review *Strategies To Prevent Weight Gain Among Adults* at http://go.usa.gov/TKxQ.

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Review compares approaches for determining need for stenting in patients with coronary artery disease

There is moderate strength of evidence to suggest that use of fractional flow reserve to decide whether intermediate coronary lesions require stenting reduces risk of death, heart attack, major adverse cardiac events, and procedure costs, and leads to fewer stents implanted compared with stenting decisions based on angiography alone. That's the conclusion of a new research review from AHRQ. It compares the effectiveness of various methods for determining whether coronary stenting is necessary for patients with coronary artery disease.

There is also moderate strength of evidence to suggest that the use of intravascular ultrasound to guide stent optimization reduces repeat revascularizations and restenosis, but does not affect mortality or heart attack rates compared with angiography alone.

However, the majority of the eligible studies focused on men with lower grade coronary artery disease. Future studies should include a more representative proportion of women and patients with more serious coronary artery diseases. Future work will also need to evaluate long-term patient outcomes.

There is insufficient evidence on how different intravascular diagnostic techniques compare to each other in their effects on therapeutic decisionmaking, intermediate outcomes, and patient-centered outcomes. These findings can be found in the research review *Intravascular Diagnostic Procedures and Imaging Techniques Versus Angiography Alone in Coronary Artery Stenting: Comparative Effectiveness Review* at http://go.usa.gov/TKaj. ■

Care processes in nursing home and residential long-term care settings may benefit people with dementia

Pleasant sensory stimulation, such as calm music, may reduce agitation for people with dementia, according to a new research review from AHRQ's Effective Health Care Program. The review compared characteristics and related outcomes of nursing homes and other residential long-term care settings for people with dementia. Although more research is necessary, some evidence suggests that protocols for individualized care, such as for showering and bathing, can reduce pain, discomfort, agitation, and aggression. Functional skill training may also improve physical function in basic activities of daily living.

Overall, outcomes for people with dementia do not differ between nursing homes and residential care/assisted living settings. The exception is people needing medical care, who may benefit more from a nursing home setting. More than 5 million Americans—as many as one in every eight individuals ages 65 years or older—have dementia. It is the most common reason for entry into long-term care settings.

More research is needed to support decisionmaking on the care choices and questions faced by people with dementia and their families. You can access the review *Comparison of Characteristics of Nursing Homes and Other Residential Long-Term Care Settings for People With Dementia* at http://go.usa.gov/TKgQ. You can access other materials that explore the effectiveness and risks of treatment options for various conditions at AHRQ's Effective Health Care Program Web site: www.effectivehealthcare.ahrq.gov. ■

PCA3 test may be more accurate at predicting prostate cancer than tPSA in men identified as at-risk

A new research review from AHRQ finds that in men at risk for prostate cancer, there is low strength of evidence that the prostate cancer antigen 3 gene test (PCA3) has better diagnostic accuracy at predicting prostate cancer than using elevated serum total prostate specific antigen (tPSA) levels in men at risk for prostate cancer. However, there is insufficient evidence to conclude that this leads to improved intermediate or long-term health outcomes. PCA3 also appears to have better diagnostic accuracy than tPSA as a secondary test for men with increased risk.

Prostate cancer screening has been under discussion in recent years, with the U.S. Preventive Services Task Force concluding that the potential benefits of tPSA screening do not outweigh the harms. The U.S. Food and Drug Administration recently approved a new PCA3 assay, the first molecular test to help determine the need for repeat prostate biopsies in men who have had a previous negative biopsy. When used in conjunction with other diagnostic information, the PCA3 test is intended to better inform decisionmaking about repeat biopsy.

AHRQ's review finds that more research is needed on PCA3 to assess its effectiveness in predicting prostate cancer at biopsy and to better inform biopsy, management, and treatment decisions. These findings and others can be found in the research review *PCA3 Testing for the Diagnosis and Management of Prostate Cancer* at http://go.usa.gov/TKge. ■

Health Information Technology

Electronic health records improve primary care of diabetes

Diabetes care focuses on controlling blood-sugar levels and managing diet and exercise to prevent complications. A new study shows that electronic health records (EHRs) in primary care can improve diabetes care and clinical outcomes. It found that EHRs helped more patients obtain optimal care compared to patients whose primary care providers did not have EHRs.

For 6 years, David Ballard, M.D., Ph.D., of the Baylor Health Care System, and colleagues conducted semi-annual chart reviews on 14,051 adult patients 40 years of age and older with diabetes. All were receiving care from 34 primary care practices that were part of the large, fee-for-service HealthTexas Provider Network of the Baylor Health Care System in Dallas-Fort Worth, Texas. A bundle of several measures were used as a benchmark. The bundle included controlled blood-glucose levels (HbA1c of less than or equal to 8 percent), an LDL-cholesterol level of less than 100 mg/dl, a blood pressure of less than 130/80 mmHg, documented aspirin use, and no smoking. An EHR was rolled out over a 3-year period allowing data to be collected on patients who were either never exposed to an EHR or were exposed to the EHR after implementation.

A greater percentage of patients met the standards of optimal care in the EHR-exposed group compared to the non-exposed group. The longer patients were exposed to an EHR, the greater rate of optimal care. EHR exposure also significantly improved three elements of the bundle: aspirin use, blood pressure control, and smoking status; HbA1c and lipid levels did not improve. Longer exposure to an EHR also produced significant improvements in individual care process

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Diabetes care

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measures except for blood pressure measurement, which remained unchanged over time, and urinalysis assessment, which declined. In the future, decision-support capabilities in EHRs should be enhanced and expanded to target specific outcomes in diabetes care, suggest the researchers. Their study was supported in part by AHRQ (HS20696).

See "The effectiveness of implementing an electronic health record on diabetes care and outcomes," by Jeph Herrin, Ph.D., Briget da Graca, M.S., David Nicewander, M.S., and others in the August 2012 *Health Services Research* 47(4), pp. 1522-1540. ■ *KB*

Electronic standing orders help primary care practices improve screenings and immunizations

A standing order (SO) consists of medical provider instructions that authorize nurses and others to carry out a medical order without constant approval or examination by the provider. These SOs can be particularly helpful in primary care practices to increase efficiency, quality of care, and staff morale. A new study found that practices were able to adapt electronic SO protocols successfully, resulting in increased screening and immunization rates as well as improved diabetes monitoring measures.

Researchers selected 8 practices from 20 interested primary care practices to reflect a mix of practices of various sizes and geographic locations to implement electronic SOs. The SOs covered 15 measures in the areas of screenings, adult immunizations, and diabetes care. These included such things as cholesterol screening, mammography, pneumonia, and flu vaccinations, and the monitoring of several laboratory markers in patients with diabetes. Data were extracted from electronic health records to determine how these measures were being used during a 21-month period.

Improvements were observed across all practices for 14 measures (the only exception was for monitoring HbA1c in diabetes patients). Six measures had significant improvements: osteoporosis screening, pneumonia vaccination in the elderly and young adults at high risk, tetanus/diphtheria vaccination, varicella zoster vaccination, and microalbumin testing among patients with diabetes. Every practice significantly improved on at least 3 of the 15 measures. Practices experiencing the most improvement already had in place established policies and procedures as well as a strong commitment to educate staff. Some barriers were identified to implementing electronic SOs: liability issues, distrust in the data to guide SO use, patient refusal of services, and little to no reimbursement for some immunizations. The study was supported in part by AHRQ (Contract No. 290-07-10015).

See "Implementing and evaluating electronic standing orders in primary care practice: a PPRNet study," by Lynne S. Nemeth, Ph.D., R.N., Steven M. Ornstein, M.D., Ruth G. Jenkins, Ph.D., and others, in the September-October 2012 issue of the *Journal of the American Board of Family Practice* 25(5), pp. 594-604. *KB*

■ ■ ■

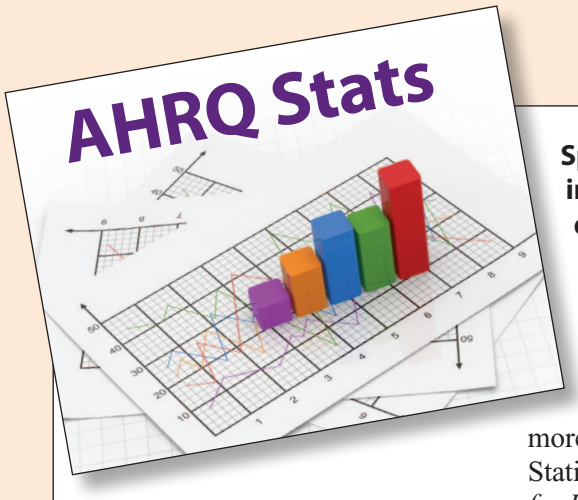
Enhancements to electronic health records can improve the diagnosis and management of depression

Most treatment for depression takes place at the primary care level. The level of depression severity must be determined, including assessment for suicide risk, in order to provide effective treatment. Including prescription fill data and answers from a patient questionnaire in electronic health records (EHRs) improves the identification of depression severity, treatment response, and suicidality, according to a recent study. Researchers collected data on 117,878 patients from 14 practices participating in the Distributed Ambulatory Research in Therapeutics Network study to examine how EHR data can be used to determine the level of depression severity and improve its diagnosis and management.

The study linked data from EHRs at 25 organizations comprised of 1,700 clinicians and more than 3 million patients. Practices were prompted by the EHR to use a 9-item short patient questionnaire to obtain scores on the severity of depression and its impact on functional impairment. In addition, prescription fulfillment data were used to find out which patients filled an antidepressant prescription.

A total of 81,028 episodes of depression were identified in 61,464 patients. There was substantial variation found in the severity of illness and suicidality at baseline. The questionnaire identified 25 percent to 30 percent of patients who had some thoughts of suicide. Suicidality was found to have a direct correlation with the severity of depression. By adding prescription fulfillment data to severity assessments, the researchers were able to determine the levels of medication adherence and how changes in treatment affected the level of suicidality. Supplementing EHR data with prescription fulfillment data and depression questionnaire data created a measurement-based care environment for the treatment of depression. The study was supported by AHRQ (Contract No. 290-05-0037).

See "Enhancing electronic health record measurement of depression severity and suicide ideation: A distributed ambulatory research in therapeutics network (DARTNet) study," by Robert J. Valuck, Ph.D., R.Ph., Heather D. Anderson, Ph.D., Anne M. Libby, Ph.D., and others in the September-October 2012 Journal of the *American Board of Family Medicine* 25(5), pp. 582-593. *KB*



Hospital admissions for bipolar disorders soar among children and teens

Hospital admissions of children 5 to 9 for bipolar disorders soared by nearly 700 percent from 1997 to 2010, while those of children 10 to 14 and 15 to 17 rose by 475 percent and 345 percent, respectively. For more details, see the AHRQ Statistical Brief #148 *Most Frequent Conditions in U.S. Hospitals, 2010* at http://go.usa.gov/TKZF.

Spending on hospital care in 2010 averaged $4,221 a day

Spending in 2010 on hospital care from all sources of payments averaged $4,221 a day or $13,131 for the entire hospital stay. For more details, see AHRQ's MEPS Statistical Brief #401 *Expenses for Hospital Inpatient Stays, 2010* at http://go.usa.gov/TKBA.

Millions of U.S. women ages 18 to 39 sought medical care in 2009

Millions of women ages 18 to 39 sought care in 2009 for the following conditions: mental disorders (6.4 million), asthma and chronic obstructive pulmonary disease (5.5 million), bronchitis and upper respiratory infection (5.3 million), and normal pregnancy and childbirth (5 million). For more details see the MEPS Statistical Brief #403 *Health Care Expenditures for the Most Commonly Treated Conditions of Women Ages 18 to 39, 2009* at http://go.usa.gov/TKKY.

AHRQ to sponsor Webinar on Advanced Methods in Delivery System Improvement Research

AHRQ is sponsoring a series of Webinars on planning, executing, analyzing, and reporting research on delivery system improvement. Upcoming topics are Statistical Process Control (May 14 from 1:00 to 2:00 p.m. EDT), Logic Models (June 4 from 1:00 to 2:00 p.m. EDT), Formative Evaluation (July 15 from 1:00 to 2:00 p.m. EDT), and Mixed Methods (December; date TBA). The lead presenters are authors of forthcoming briefs in AHRQ's Primary Care Medical Home Research Methods Series. The discussants are AHRQ-funded researchers applying the method to other delivery system areas. The December Webinar will be based on a forthcoming special issue of *Health Services Research* on mixed methods in healthcare delivery systems research. To register, go to https://secure.confertel.net/tsregister.asp?program=EconometricaAHRQ.

Printed summaries of AHRQ's "Closing the Quality Gap" evidence report series available

AHRQ has developed a resource to help health care providers learn more about the evidence supporting eight quality improvement strategies. *Closing the Quality Gap: Revisiting the State of the Science* offers executive summaries of eight evidence reports that focus on various aspects of health care quality. AHRQ's evidence reports offer an unbiased analysis of available research on specific health care topics. The individual report summaries are the following:

- *Bundled Payment: Effects on Health Care Spending and Quality* (Publication No. 12-E007-1).
- *The Patient-Centered Medical Home* (Publication No. 12-E008-1).
- *Quality Improvement Interventions to Address Health Disparities* (Publication No. 12-E009-1).
- *Medication Adherence Interventions: Comparative Effectiveness* (Publication No. 12-E010-1).
- *Public Reporting as a Quality Improvement Strategy* (Publication No. 12-E011-1)
- *Prevention of Healthcare–Associated Infections* (Publication No. 12(13)-E012-1).
- *Quality Improvement Measurement of Outcomes for People With Disabilities* (Publication No. 12(13)-E013-1).
- *Improving Health Care and Palliative Care for Advanced and Serious Illness* (Publication No. 12(13)-E014-1).

To order the set of executive summaries, request Publication No. OM 13-0014 from the AHRQ Publications Clearinghouse at 1-800-358-9295 or ahrqpubs@ahrq.gov.

To order individual executive summaries, please order by title and publication number. For online copies, go to www.ahrq.gov/research/findings/evidence-based-reports.

AHRQ offers guidance on how to design physician performance feedback reports

A new AHRQ resource offers guidance to help community quality collaboratives, medical groups, health plans, and other sponsors of private physician feedback reports effectively design, disseminate, and use these reports. The guidance includes using performance measures that are actionable by physicians, providing meaningful comparative benchmarks, enabling the assessment of performance trends within the report, and embedding private reporting within a quality improvement infrastructure. For your free copy of *Private Performance Reporting Feedback for Physicians: Guidance for Community Quality Collaboratives*, go to www.ahrq.gov/qual/privfeedbackgdrpt. ■

Research Briefs

Anderson, J.E., Lassiter, R., Bickler, S.W., and others. (2012, September). "Brief tool to measure risk-adjusted surgical outcomes in resource-limited hospitals." (AHRQ grant HS19913). *Archives of Surgery* 147(9), pp. 798-803.
To improve surgery in less developed and developed countries, quality measurement tools must be broadly and internationally applicable. The researchers developed and validated a risk-adjusted tool to measure surgical outcomes in resource-limited hospitals. They found that fewer than six variables may be necessary to predict inpatient mortality, reducing the cost of collecting variables by 95 percent.

Bhavsar, N.A., Kottgen, A., Coresh, J., and Astor, B.C. (2012). "Neutrophil gelatinase-associated lipocalin (NGAL) and kidney injury molecule 1 (KIM-1) as predictors of incident CKD stage 3: The atherosclerosis risk in communities (ARIC) study." (AHRQ grant T32 HS19488). *American Journal of Kidney Disease* 60(2), pp. 233-240.
Although proteinuria strongly predicts progression of kidney disease, other factors such as neutrophil gelatinase-associated lipocalin (NGAL) and kidney injury molecule 1 (KIM-1) have also been identified as potential markers of acute kidney injury. This study that included 286 participants has found that higher NGAL levels, but not higher KIM-1 levels, are significantly associated with incident chronic kidney disease stage 3.

Burke, J.F., Lisabeth, L.D., Brown, D.L., and others. (2012). "Determining stroke's rank as a cause of death using multicause mortality data." (AHRQ grant HS17690). *Stroke* 43, pp. 2207-2211.
Although stroke remains the leading cause of severe adult disability in the United States, it has fallen from second to fourth among the leading organ and disease-specific causes of death over the last decade. This study found that changes in mortality attribution methodology are not likely responsible for stroke's decline as a leading cause of death.

Cooper, P.F., Manski, R.J., and Pepper, J.V. (2012, September). "The effect of dental insurance on dental care use and selection bias." *Medical Care* 50(9), pp. 757-763. Reprints (AHRQ Publication No. 13-R016) are available from AHRQ.*
The researchers sought to reanalyze the effect of having dental insurance on use of dental care services by controlling for selection bias. They compared a number of different statistical techniques to control for selection bias, and found that the probit and instrumental variable models gave similar estimates of the effect of dental insurance on probability of seeking dental care. Based on this, the researchers conclude that selection bias is not an issue in such analyses.

Gierisch, J.M., Straits-Tröster, K., Calhoun, P.S., and others. (2012, February). "Tobacco use among Iraq- and Afghanistan-era veterans: A qualitative study of barriers, facilitators, and treatment preferences." (AHRQ grant T32 HS00079). *Preventing Chronic Disease* 9, 2012 [8 pp].
Although military veterans are interested in smoking cessation, their reasons for wanting to do so are poorly understood—as are their treatment preferences. In focus group discussions, the key reasons that veterans wanted to stop using tobacco include improving personal health, becoming tired of dependence on cigarettes, and preventing their family from becoming smokers. They called for a personalized approach to smoking cessation programs, such as personalized telephone counseling with the opportunity for in-person counseling.

Grabowski, D.C., Huckfeldt, P.J., Sood, N., and others. (2012, September). "Medicare postacute care payment reforms have potential to improve efficiency of care, but may need changes to cut costs." (AHRQ grant HS18541). *Health Affairs* 31(9), pp. 1941-1950.
The researchers examined the changes the Affordable Care Act mandates in payment policies for Medicare postacute care services. After examining the effects of the

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Research briefs

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adoption of Medicare prospective payment systems for postacute care a decade ago, they suggest that the current reforms could produce decreased access to postacute care for less profitable patients, impair patient outcomes, and curb spending only briefly.

Hendel, R.C., Ruthazer, R., Chaparro, S., and others. (2012, June). "Cocaine-using patients with a normal or nondiagnostic electrocardiogram: Single-photon emission computed tomography perfusion imaging and outcome." (AHRQ grant HS09110). *Clinical Cardiology* 35(6), pp. 354-358.

This study finds that myocardial perfusion imaging can reduce the number of unneeded hospitalizations among patients seen in the emergency department for chest pain associated with a normal or nondiagnostic electrocardiogram (ECG), regardless of a patient's history of cocaine use (or nonuse). The researchers compared the characteristics and outcomes of 2,475 chest pain patients with normal ECGs in a group that included 294 cocaine users and 2,181 cocaine nonusers.

Kale, A., Keohane, C.A., Maviglia, S., and others. (2012, November). "Adverse drug events caused by serious medication administration errors." (AHRQ grant HS14083). *BMJ Quality & Safety* 21(11), pp. 933-938.

This study found that potential adverse drug events (ADEs) at the medication administration stage can cause serious patient harm. Ten actual ADEs resulted from the 133 serious and life-threatening potential ADEs found in their study of 14,041 medication administrations. Half of the ADEs were caused by dosage and monitoring errors for antihypertensive medications.

Kearns, W.D., Fozard, J.L., Becker, M., and others. (2012). "Path tortuosity in everyday movements of elderly persons increases fall prediction beyond knowledge of fall history, medication use, and standardized gait and balance assessments." (AHRQ grant HS18205). *Journal of the American Medical Directors Association* 13, pp. 665e7-665e13.

This study investigated the relationship between falls by assisted living facilities residents over a 1-year period to their movement path variability (tortuosity) over the same period. The study found that high fractal D levels, detected using commercially available telesurveillance technologies, lead to an increased likelihood of falls.

Kleinman, L.C., and Dougherty, D. (2013, March). "Assessing quality improvement in health care: Theory for practice." *Pediatrics* 131, suppl 1, pp. S110-S119. Reprints (AHRQ Pub. No. 13-R042) are available from AHRQ.*

This article argues for the centrality of science, including rigorous theory development and testing, in moving the nation's quality aims forward. The authors identify gaps in the current theory and practice of quality improvement(QI) research and evaluation in health care. They suggest that specific designs should be matched to specific circumstances for considering health care improvement and its evaluation. Finally, they suggest how practical experience can help to build a theory of applied QI in health care.

Levine, R., Shore, K., Lubalin, J., and others. (2012). "Comparing physician and patient perception of quality in ambulatory care." (AHRQ grant HS13193). *International Journal for Quality in Health Care* 24(4), pp. 348-356.

A survey of 168 patients and 39 clinicians found that the vast majority of patients and physicians agreed on three major categories that were critical elements of quality care: clinical skill, rapport, and health-related communication behaviors. The latter category includes such things as giving complete and accurate information to the patient and explaining things. Patients placed greater value than did physicians on behaviors such as providing information on non-medical ways to care for their condition.

Lorch, S.A. (2013, January). "Quality measurements in pediatrics. What do they assess?" (AHRQ grant HS20508). *JAMA Pediatrics* 167(1), pp. 89-90.

This editorial discusses important areas for future research and use of quality measurements raised by Profit, et al. in their paper on the correlation of neonatal intensive care unit performance across multiple measures of quality of care. These areas include the use of properly developed composite measurements and the need for measurements that assess the underlying principles of high-quality care.

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Patel, M.B., Guillamondegui, O.D., Ott, M.M., and others. (2012). "Oh surgery case log data, where art thou?" (AHRQ grant T32 HS13833). *Journal of the American College of Surgery* 215, pp. 427-431.

Using the American College of Surgery's Case Log, the researchers have developed a method of data capture, categorization, and reporting of acute care surgeons' experiences. They created 15 report types consisting of operative experience by service, procedure by major category (cardiothoracic, vascular, solid organ, abdominal wall, hollow viscus, and soft tissue), total resuscitations, ultrasound, airway, intensive care unit services, basic neurosurgery, and basic orthopedics.

Petterson, S.M., Liaw, W.R., Phillips, R.L., Jr., and others. (2012, November/December). "Projecting US primary care physician workforce needs: 2010–2025." (AHRQ Contract No. 233-09-00359). *Annals of Family Medicine* 10(6), pp. 503-509. Reprints (AHRQ Publication No. 13-R029).

The researchers estimated the number of primary care physicians (PCPs) required to meet U.S. health care's utilization needs through 2025 in light of the Affordable Care Act. They estimated the total yearly number of PCP office visits to grow from 462 million (2008) to 565 million (2025). Therefore, there will be a need for an additional 52,000 PCPs by 2025.

Poon, E.G., Kachalia A., Puopolo, A.L., and others. (2012). "Cognitive errors and logistical breakdowns contributing to missed and delayed diagnoses of breast and colorectal cancers: A process analysis of closed malpractice claims." (AHRQ grant HS11886). *Journal of General Internal Medicine* 27(11), pp. 1416-1423.

The researchers used 56 cases of missed and delayed diagnosis in performing structured analyses to identify specific points in the diagnostic process in which errors occurred. They found that cognitive errors and logistical breakdowns were common among missed and delayed diagnoses of breast and colorectal cancers. The clinical activity most prone to cognitive error was the selection of the diagnostic strategy.

Saag, K.G., Mohr, P.E., Esmail, L., and others. (2012). "Improving the efficiency and effectiveness of pragmatic clinical trials in older adults in the United States." (AHRQ grant HS16956). *Contemporary Clinical Trials* 33, pp. 1211-1216.

The authors summarize viewpoints on novel and lower-cost approaches to the design of pragmatic clinical trials (PCTs) resulting from a meeting of stakeholders and from discussions among the listed authors. The viewpoints include optimizing the use of community-based practices through partnership with Practice-Based Research Networks, using information technology to simplify PCT subject recruitment, consent and randomization processes, and using linkages to large administrative databases, such as Medicare.

Scholle, S.H., Vuong, O., Ding, L., and others. (2012, November). "Development of field test results for the CAHPS PCMH Survey." (AHRQ grants HS16978, HS16980). *Medical Care* 50(11), suppl 3, pp. S2-S10.

The goal of this study was to develop survey questions to assess patient experiences that reflect key elements of the Patient-Centered Medical Home model. Ten items in four new domains and four items in two existing domains were selected to be supplemental items to be used in conjunction with the adult Clinical and Group Consumer Assessment of Healthcare Providers and Systems 1.0 Survey. This study provides support for the reliability and validity of these new items.

Sittig, D.F., and Singh, H. (2012, November). "Electronic health records and national patient-safety goals." (AHRQ grant HS17820). *New England Journal of Medicine* 367(19), pp. 1854-1860.

To account for the variation in the stages of implementation and levels of complexity across clinical practice settings, the authors propose a three-phase framework for the development of electronic health record-specific patient-safety goals. The first phase includes goals to mitigate risks that are unique and specific to technology. The second phase addresses misuse or inappropriate use of technology. The third phase concerns the use of technology to monitor health care processes.

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Steiner, J.F. (2012). "Rethinking adherence." (AHRQ grant HS19859). ***Annals of Internal Medicine*** **157, pp. 580-585.**
The author argues that improving medication adherence for patients being treated for diabetes, hypertension, or hyperlipidemia requires recognition that adherence is a set of interacting behaviors influenced by individual, social, and environmental forces. Additionally, adherence interventions must be broadly based, rather than targeted to specific population subgroups. Finally, counseling with a trusted clinician needs to be complemented by outreach interventions and removal of structural and organizational barriers.

Taylor, J.L., McPheeters, M.L., Sathe, N.A., and others. (2012, September). "A systematic review of vocational interventions for young adults with autism spectrum disorders." (AHRQ Contract No. 290-07-10065). ***Pediatrics*** **130(3), pp. 531-538.**
The researchers undertook a systematic review to assess the impact of vocational interventions on teenagers and young adults with autism spectrum disorders. Because of the poor quality of the six studies identified, no conclusions could be drawn. Five of the six studies involved small populations and failed to randomly assign subjects to the intervention and control arms.

Thompson, D.A., Kass, N., Holzmueller, C., and others. (2012, July/August). "Variation in local institutional review board evaluations of a multicenter patient safety study." (AHRQ grant HS18762). ***Journal for Healthcare Quality*** **34(4), pp. 33-39.**
This study focused on characterizing the review procedures used by five hospital institutional review boards (IRBs) in their evaluation of a study on patient safety risks in cardiovascular operating room procedures. It found that the IRB process varied widely from hospital to hospital. Reviews ranged from full committee review and approval with consents required from patients and operating room staff to determining the study exempt from review and participant consent.

Touchette, D.R., Yang, Y., Tiryaki, F., and Galanter, W.L. (2012). "Economic analysis of alvimopan for prevention and management of postoperative ileus." (AHRQ grant HS16973). ***Pharmacotherapy*** **32(2), pp. 121-128.**
This study finds that alvimopan is a potentially useful drug in the treatment of patients undergoing bowel resection surgery by laparotomy. The drug is likely to reduce hospital length of stay and total cost of care in this population, although limitations exist in the current reports that raise questions about the certainty of these findings. The data sources were four phase III clinical trials, two pooled analyses, and one meta-analysis.

Wang, S-Y., Olson-Kellogg, B., Shamliyan, T.A., and others. (2012). "Physical therapy interventions for knee pain secondary to osteoarthritis." (AHRQ Contract No. 290-07-10064). ***Annals of Internal Medicine*** **157, pp. 632-644.**
This review evaluates the efficacy and comparative effectiveness of available physical therapy interventions for adult patients with knee osteoarthritis (OA). It found that interventions that empower patients to actively self-manage knee OA (such as aerobic, strength, and proprioception exercise) improved patient-centered outcomes. No single intervention, however, improved all outcomes. The meta-analysis included 84 randomized controlled trials.

Ward, M.M., Vartak, S., Loes, J.L., and others. (2012). "CAH staff perception of a clinical information system implementation." (AHRQ grant HS16156). ***American Journal of Managed Care*** **18(5), pp. 244-252.**

This study of staff response to implementation of a clinical information system (CIS) at seven critical access hospitals found that providers had significant differences in their responses from nurses and other clinical staff. The hospitals were rural, with a median of 25 acute care beds. Staff were surveyed at baseline, before implementation of the CIS, and after implementation.

Winters, B., Custer, J., Galvagno, S.M., and others. (2012). "Diagnostic errors in the intensive care unit: A systematic review of autopsy studies. (AHRQ grant HS17755). ***BMJ Quality and Safety*** **21, pp. 894-902.**
The purpose of this study was to systematically estimate the prevalence and distribution of autopsy-confirmed diagnostic errors in the intensive care unit (ICU) population. It found that 28 percent of autopsied ICU patients

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had at least one misdiagnosis. Vascular events and infections were the leading potentially lethal misdiagnoses accounting for almost 82 percent of potentially lethal class I errors and almost 86 percent of the serious but not lethal class II errors.

Yabroff, K.R., Dowling, E., Rodriguez, J., and others. (2012). "The Medical Expenditure Panel Survey (MEPS) experiences with Cancer Survivorship Supplement." ***Journal of Cancer Survival*** **6, pp. 407-419. Reprints (AHRQ Publication No. 13-R018) are available from AHRQ.***

The authors describe selected publicly available data sources for estimating the burden of cancer in the United States. They also describe a new collaborative effort to improve the quality of these data, the nationally representative Medical Expenditure Panel Survey Experiences with Cancer Survivorship Supplement.

Zima, B.T., Murphy, J.M., Scholle, S.H., and others. (2013). "National quality measures for child mental health care: Background, progress, and next steps." (AHRQ grant HS20506). ***Pediatrics*** **131, pp. S38-S49.**

This article reviews the following: recent relevant health policy initiatives; the selection of national child health quality measures; existing national standards for child mental health care, including the strength of the evidence supporting them; an update on development of new quality measures related to child mental health care; and early lessons from these national efforts. ■

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